

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listing of Claims:**

1. (currently amended) A real-time monitoring apparatus for biochemical reaction, which comprises:
  - a temperature control block comprising a thermoelectric element (2) capable of supplying heat into reaction tubes and a heat transmission block (3) which transmit the heat to the reaction tubes;
  - a light irradiation source comprising a lamp (5) which irradiates light with uniform intensity to sample contained in at least one of the reaction tubes, a condensing lens and the optical waveguide; and
  - an optical system comprising a receiving part for receiving fluorescence irradiated from the sample by the light emitted from the light irradiation source.
2. (previously presented) The real-time monitoring apparatus according to claim 1, wherein the lamp (5) includes a first ellipsoidal reflecting mirror or a parabolic mirror.
3. (original) The real-time monitoring apparatus according to claim 1, wherein the refractive index of medium of the optical waveguide is 1.35 ~ 2.0.
4. (original) The real-time monitoring apparatus according to claim 1, wherein the optical waveguide has a rectangular shape.
5. (currently amended) The real-time monitoring apparatus according to claim 1, wherein the cross-section of the optical waveguide has a round shape.

Claims 6-10 (cancelled)

11. (currently amended) A real-time monitoring apparatus for biochemical reaction, which comprises:

a temperature control block comprising a thermoelectric element (2) capable of supplying heat into reaction tubes capable of containing a sample in one or more of said reaction tubes, and a heat transmission block (3) which transmit the heat to the reaction tubes ~~containing sample~~;

a light irradiation source comprising a lamp (5) which irradiates light with uniform intensity to the sample contained in the reaction tube, a condensing lens and the optical waveguide; and

an optical system comprising a light receiving part for receiving fluorescence generated by the light irradiated from the light source and a second reflecting mirror (11) which alters light path.

12. (previously presented) The real-time monitoring apparatus according to claim 11, which comprises two or more the second reflecting mirror (11) which alters light path.

13. (original) The real-time monitoring apparatus according to claim 11, wherein the lamp (5) comprises an ellipsoidal mirror.

14. (original) The real-time monitoring apparatus according to claim 11, wherein the refractive index of medium of the optical waveguide (8) is 1.35 ~ 2.0.

15. (original) The real-time monitoring apparatus according to claim 11, wherein the optical waveguide (8) has rectangular shape.

16. (currently amended) The real-time monitoring apparatus according to claim 11 , wherein the cross-section of the optical waveguide has a round shape.

17. (previously presented) The real-time monitoring apparatus according to claim 2, wherein the lamp including a ellipsoidal reflecting mirror further comprises a focusing lens.